SUPPLEMENTAL MATERIAL

Table S1. Additional diastolic dysfunction classification schemes used for sensitivity analyses.

Age- and sex-specific criteria version 2*					
	Normal Diastolic Function	**Mild DD**			**Moderate-severe DD**
		1	**or 2**	**or 3**	
E′ (cm/s)	Normal	Abnormal	Normal	Normal	Abnormal
E/A	Normal	Any	Abnormal	Abnormal	Any
E/E′	Any	Normal	Normal	Abnormal	Abnormal

Age- and sex-specific criteria version 3			
	Normal Diastolic Function	**Mild DD**	**Moderate-severe DD**
E′ (cm/s)	Normal	Abnormal	Abnormal
E/E′	Any	Normal	Abnormal

For E′: normal is >10th percentile, abnormal is ≤10th percentile
For E/A ratio: normal is >10th percentile, abnormal is ≤10th percentile
For E/E′ ratio: normal is <90th percentile, abnormal is ≥90th percentile
* Only 2 of 3 conditions necessary for each group

Table S2. Composition of study samples by age decade and sex.

Age	Broad sample, N (% women)	Reference sample, N (% women)
<30 years	453 (55)	273 (62)
30 to <40 years	1313 (54)	705 (67)
40 to <50 years	1513 (54)	661 (65)
50 to <60 years	1071 (56)	361 (65)
60 to <70 years	1016 (57)	244 (70)
70 to <80 years	588 (58)	93 (71)
≥80 years	148 (64)	18 (83)

Table S3. Clinical correlates of ≥ mild diastolic dysfunction.

	Age- and sex-specific criteria		Single cutpoint criteria	
Variable	**Odds ratio (95% CI)**	**p value**	**Odds ratio (95% CI)**	**p value**
Age	0.96 (0.90, 1.03)	0.30	8.40 (7.25, 9.73)	<0.0001
Female sex	1.38 (1.22, 1.56)	<0.0001	1.69 (1.40, 2.05)	<0.0001
Systolic blood pressure	1.20 (1.11, 1.30)	<0.0001	--	--
Diastolic blood pressure	1.27 (1.18, 1.37)	<0.0001	1.47 (1.33, 1.61)	<0.0001
Hypertension treatment status	--	--	--	--
Body mass index	1.40 (1.31, 1.48)	<0.0001	1.34 (1.22, 1.47)	<0.0001
Total/HDL cholesterol	1.12 (1.06, 1.19)	0.0003	--	--
Diabetes	1.68 (1.32, 2.13)	<0.0001	--	--

Values represent the odds of having at least mild diastolic dysfunction for each one standard deviation higher value (for continuous variables) or the presence of a categorical variable versus its absence.

One SD is equal to 15.3 years for age, 16.1 mm Hg for SBP, 9.6 mm Hg for DBP, 5.4 kg/m^2 for BMI and 1.2 for Total/HDL cholesterol.

Smoking and previous cardiovascular disease were included as candidate variables in the selection models but were not statistically significant.

Table S4. Clinical correlates of ≥ moderate diastolic dysfunction.

	Age- and sex-specific criteria		Single cutpoint criteria	
Variable	**Odds ratio (95% CI)**	**p value**	**Odds ratio (95% CI)**	**p value**
Age	0.86 (0.78, 0.95)	0.003	2.42 (1.96, 2.99)	<0.0001
Female sex	1.44 (1.21, 1.71)	<0.0001	2.49 (1.84, 3.37)	<0.0001
Systolic blood pressure	1.24 (1.11, 1.39)	<0.0001	1.65 (1.42, 1.92)	<0.0001
Diastolic blood pressure	1.37 (1.24, 1.52)	<0.0001	0.77 (0.66, 0.89)	0.0007
Hypertension treatment status	--	--	1.60, (1.17, 2.17)	0.003
Body mass index	1.42 (1.31, 1.53)	<0.0001	1.45 (1.28, 1.63)	<0.0001
Total/HDL cholesterol	1.20 (1.11, 1.30)	<0.0001	--	--
Diabetes	1.94 (1.45, 2.59)	<0.0001	--	--

Values represent the odds of having at least moderate diastolic dysfunction for each one standard deviation higher value (for continuous variables) or the presence of a categorical variable versus its absence.
One SD is equal to 15.3 years for age, 16.1 mm Hg for SBP, 9.6 mm Hg for DBP, 5.4 kg/m^2 for BMI and 1.2 for Total/HDL cholesterol.
Smoking and previous cardiovascular disease were included as candidate variables in the selection models but were not statistically significant.

Table S5. Clinical correlates of LV diastolic dysfunction including heart rate as a predictor.

	Age- and sex-specific criteria		Single cutpoint criteria	
Variable	**Odds ratio (95% CI)**	**p value**	**Odds ratio (95% CI)**	**p value**
Age	0.90 (0.84, 0.97)	0.004	6.43 (5.49, 7.54)	<0.0001
Female sex	1.21 (1.07, 1.37)	0.002	1.49 (1.24, 1.80)	<0.0001
Systolic blood pressure	1.23 (1.14, 1.33)	<0.0001	1.17 (1.05, 1.30)	0.004
Diastolic blood pressure	1.21 (1.12, 1.30)	<0.0001	1.20 (1.07, 1.33)	0.001
Hypertension treatment status	1.30 (1.12, 1.50)	0.0006	1.38 (1.14, 1.68)	0.001
Body mass index	1.36 (1.28, 1.44)	<0.0001	1.26 (1.15, 1.37)	<0.0001
Total/HDL cholesterol	1.12 (1.05, 1.19)	0.0003	--	--
Diabetes	1.45 (1.15, 1.82)	0.002	--	--
Heart rate	1.42 (1.35, 1.51)	<0.0001	1.54 (1.41, 1.69)	<0.0001

Values represent the odds of having diastolic dysfunction (treated as an ordinal variable: normal diastolic function, mild DD, moderate-severe DD) for each 1 SD higher value (for continuous variables) or the presence of a categorical variable versus its absence.

1 SD is equal to: 15.3 years for age, 16.1 mm Hg for SBP, 9.6 mm Hg for DBP, 5.4 kg/m^2 for BMI, 1.2 for total/HDL cholesterol, and 9.9 beats per minute for heart rate.

HDL indicates high-density lipoprotein.

Smoking and previous cardiovascular disease were included as candidate variables in the selection models but were not statistically significant.

Table S6. Sensitivity analysis: associations of additional age- and sex-specific and age- and sex-independent criteria with incident CVD.

	# events/ # at risk	Age- and sex-adjusted, HR (95% CI)	p value	Multivariable-adjusted, HR (95% CI)	p value
Age- and sex-specific criteria (version 2)					
1. Normal diastolic function	150/4355	Referent	--	Referent	--
2. Mild DD	34/896	1.39 (0.96-2.03)	0.09	1.24 (0.85-1.81)	0.26
3. Mod-severe DD	29/519	1.58 (1.06-2.35)	0.02	1.19 (0.79-1.80)	0.41
Test for trend		1.28 (1.06-1.54)	0.009	1.12 (0.92-1.35)	0.26
1. Normal diastolic function	150/4355	Referent	--	Referent	--
2. Any DD	63/1415	1.47 (1.10-1.98)	0.01	1.22 (0.90-1.65)	0.20
Age- and sex-specific criteria (version 3)					
1. Normal diastolic function	168/4837	Referent	--	Referent	--
2. Mild DD	16/414	1.26 (0.75-2.11)	0.38	1.12 (0.67-1.87)	0.67
3. Mod-severe DD	29/519	1.53 (1.03-2.27)	0.04	1.16 (0.77-1.74)	0.49
Test for trend		1.24 (1.02-1.50)	0.03	1.08 (0.89-1.31)	0.45
1. Normal diastolic function	168/4837	Referent	--	Referent	--
2. Any DD	45/933	1.42 (1.02-1.97)	0.04	1.14 (0.81-1.60)	0.44

Hazard ratios (HR) represent the relative hazard for each category compared with the referent group.

The multivariable model is adjusted for age, sex, systolic blood pressure, hypertension treatment status, diabetes, body mass index, total/HDL cholesterol, and smoking.

Figure S1. Flow diagram of study design.

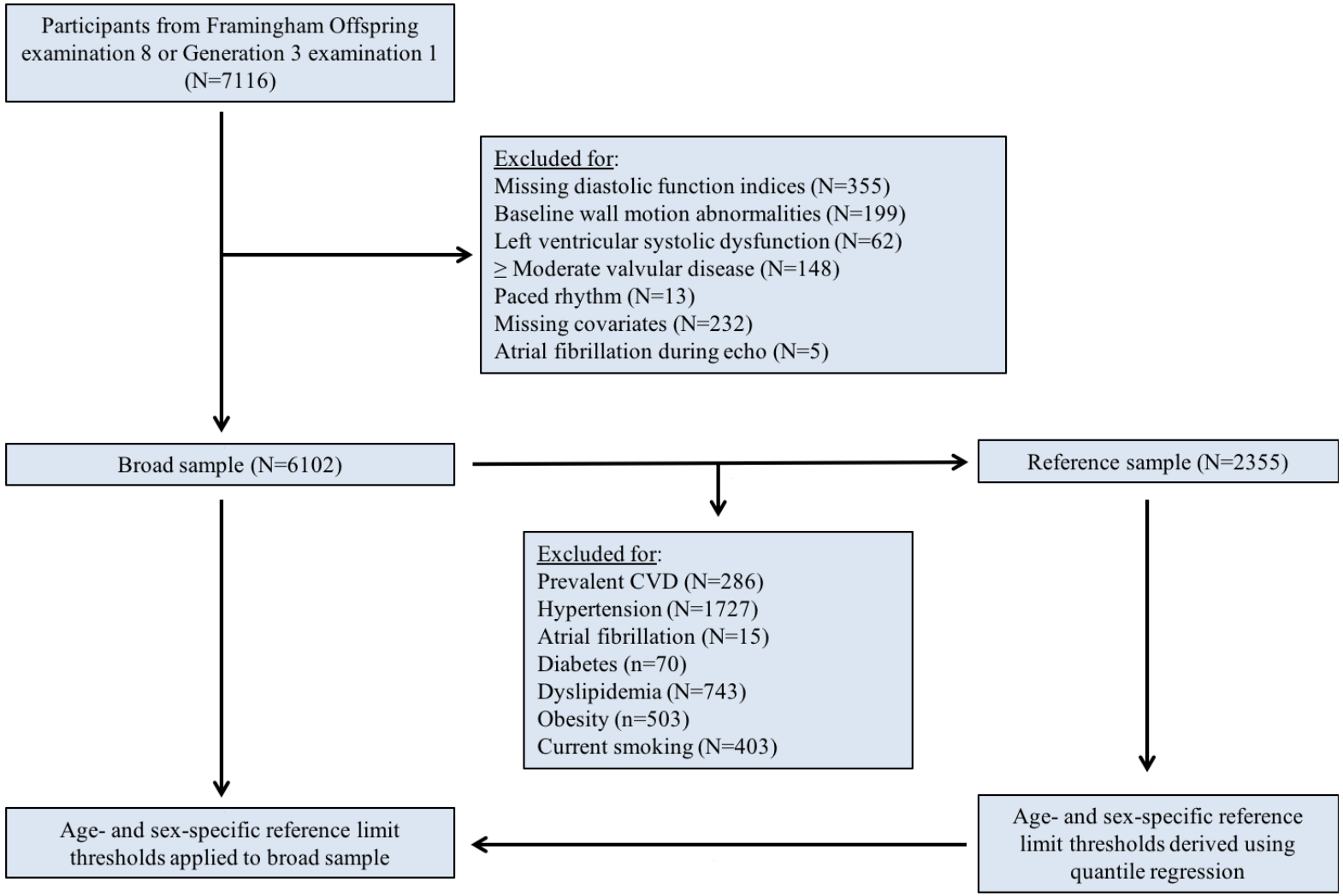
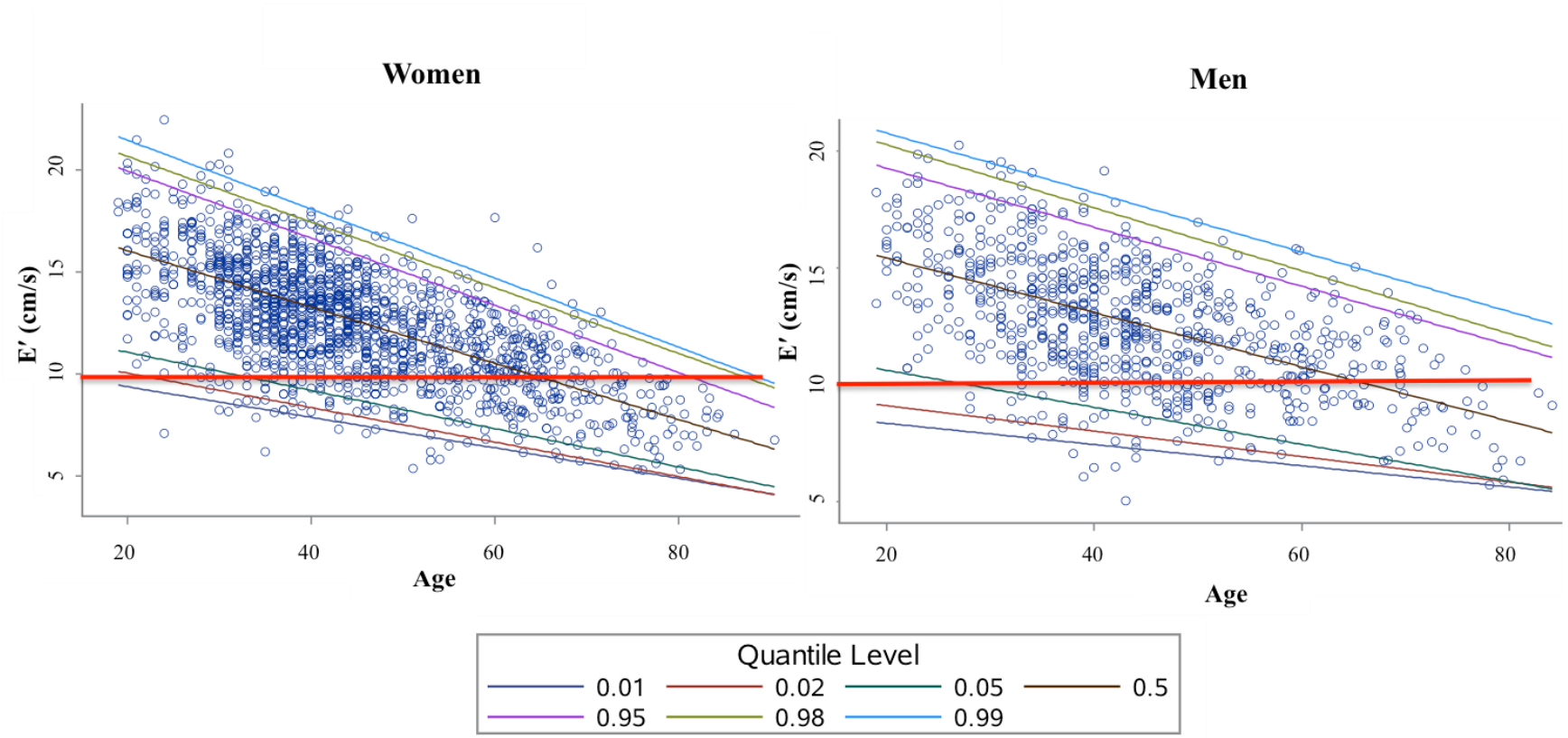


Figure S2. Quantile regression plots for lateral E′.

A. Reference Sample.



B. Broad Sample. The horizontal red line represents the guideline recommended single cutpoint reference limit.

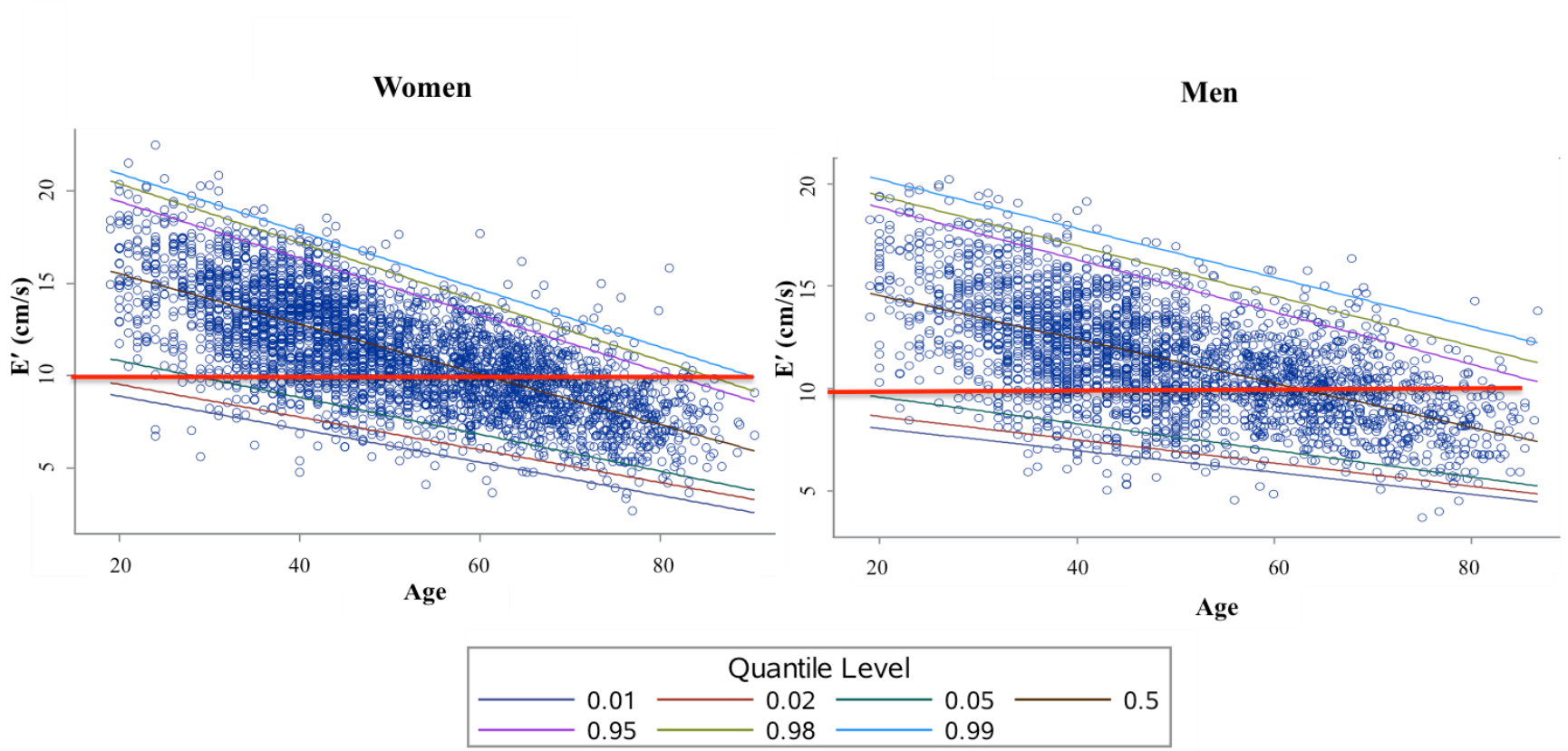
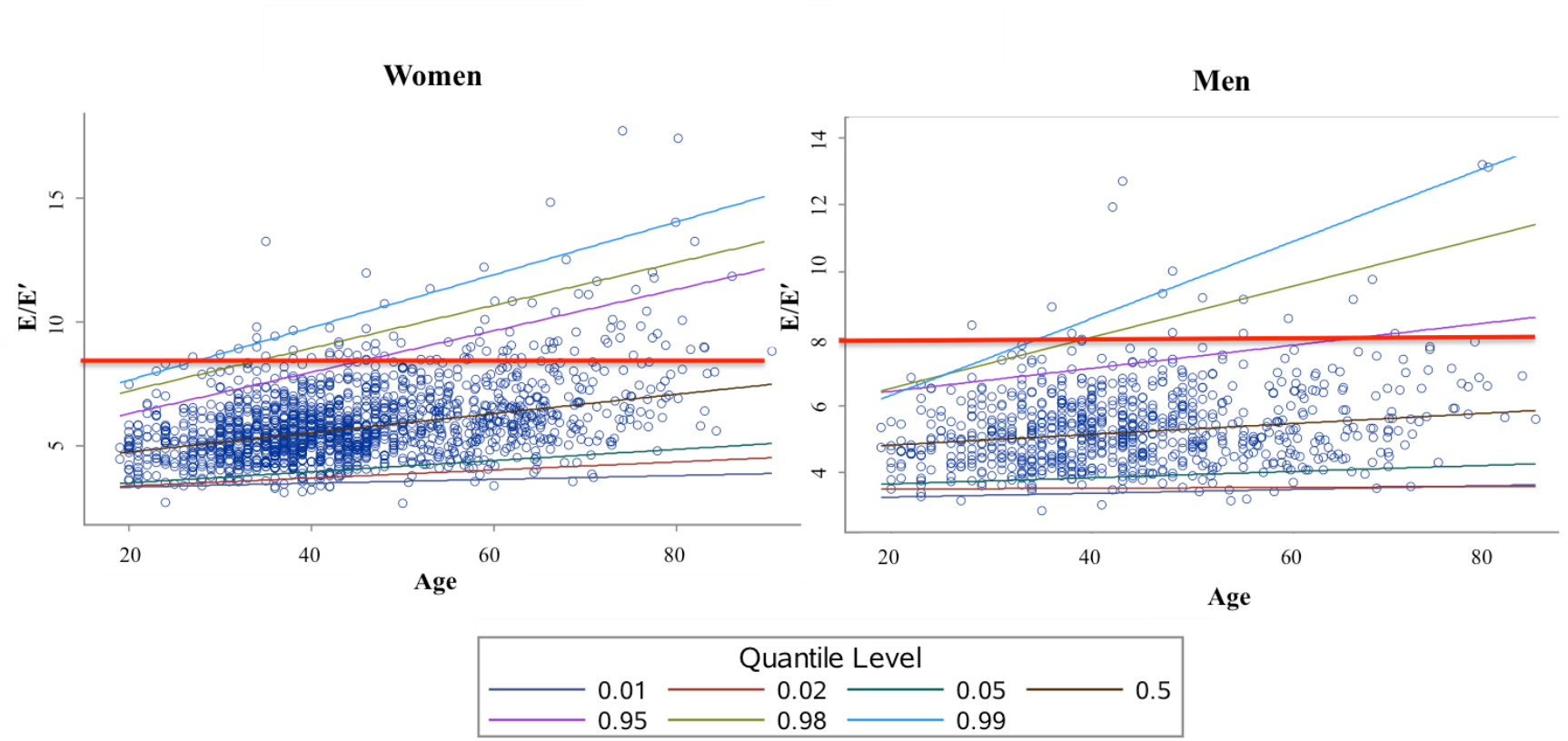


Figure S3. Quantile regression plots for E/E′ ratio.

A. Reference Sample.



B. Broad Sample. The horizontal red line represents the guideline recommended single cutpoint reference limit.

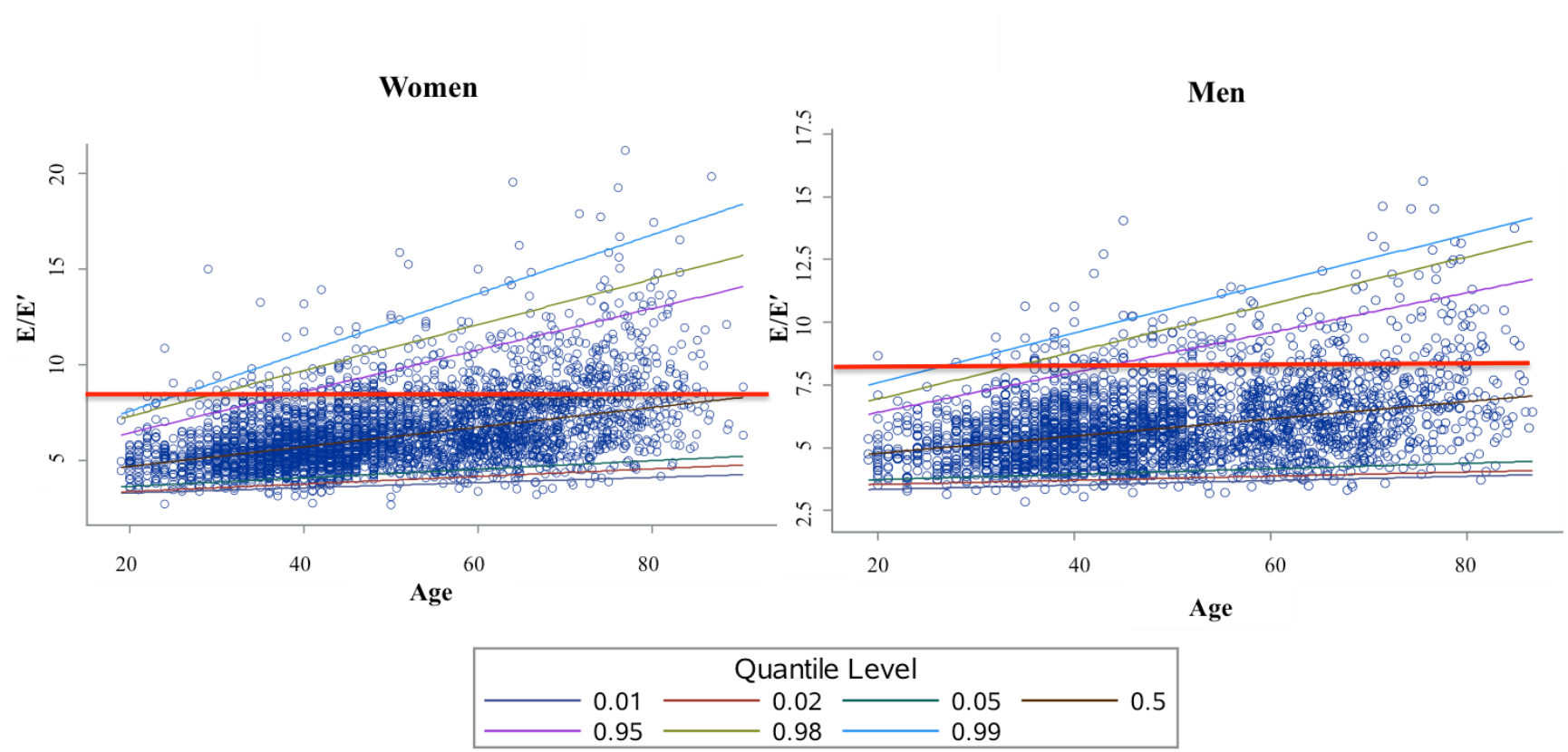
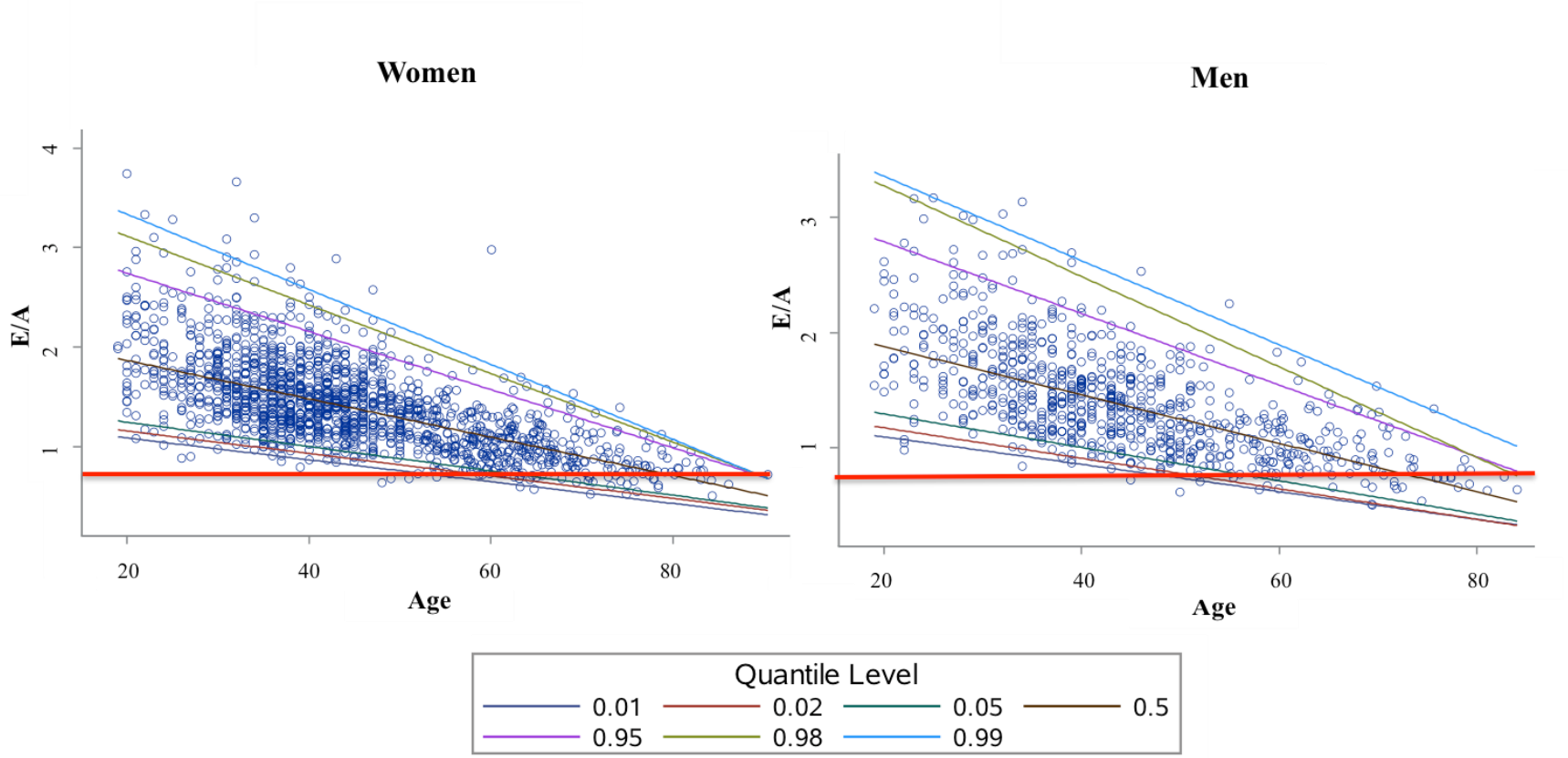


Figure S4. Quantile regression plots for E/A ratio.

A. Reference Sample.



B. Broad Sample. The horizontal red line represents the guideline recommended single cutpoint reference limit.

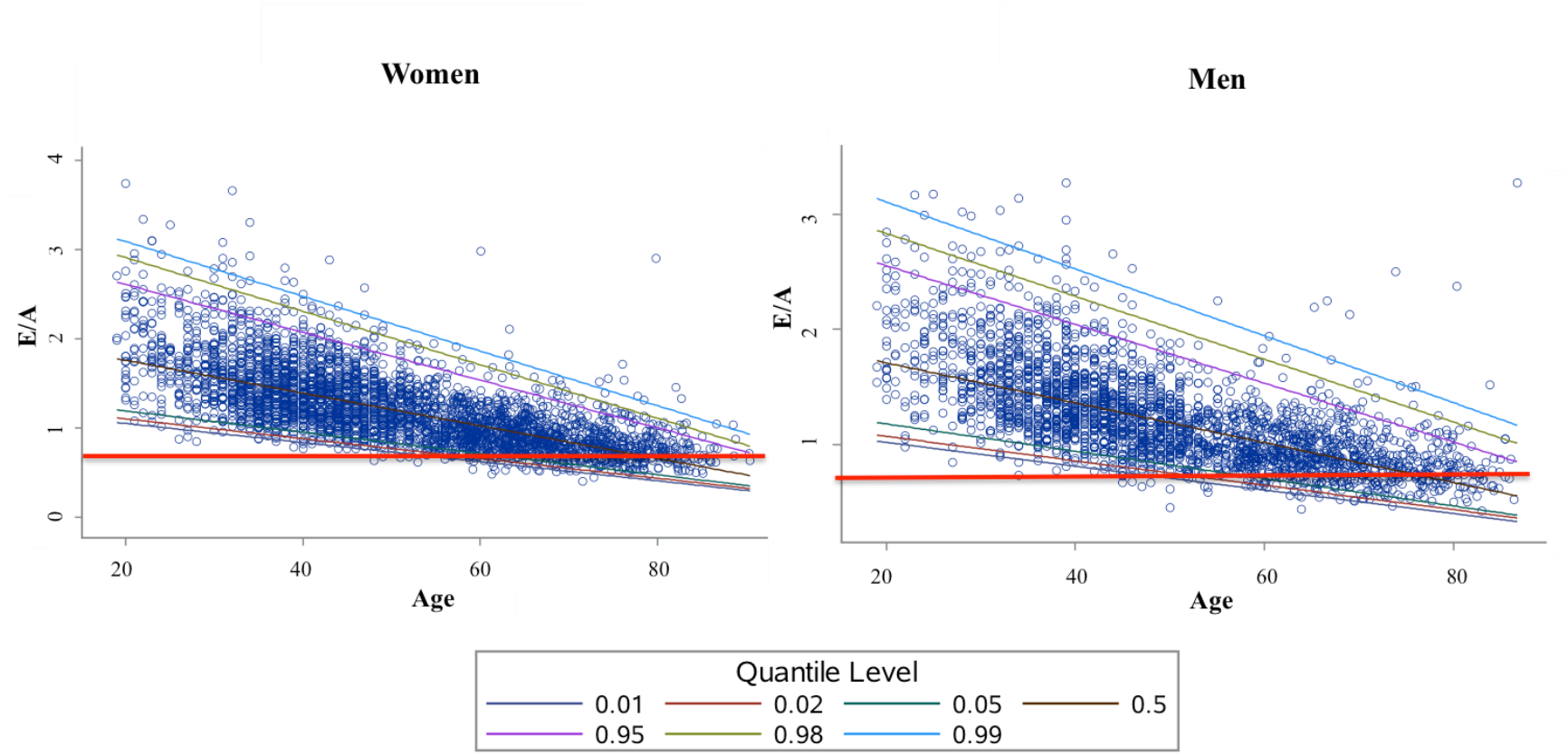
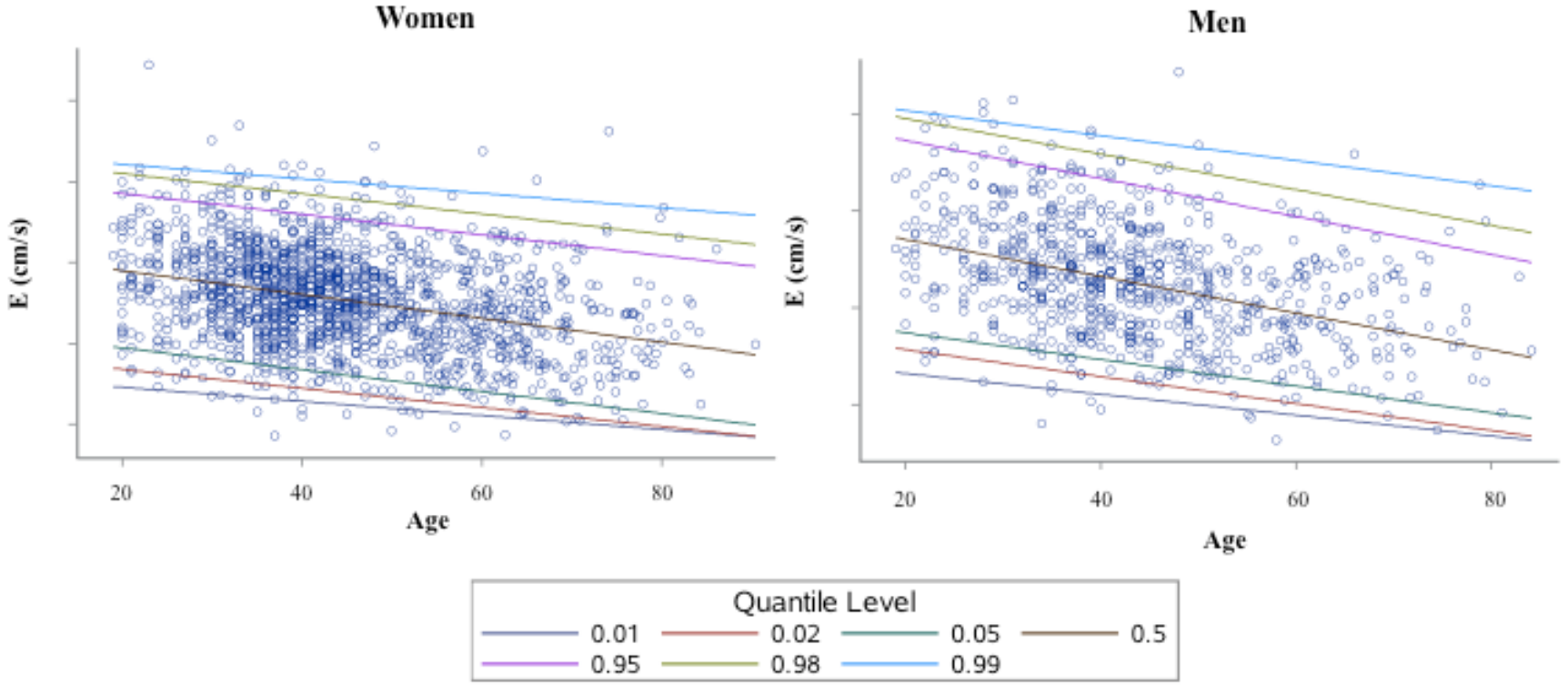


Figure S5. Quantile regression plots for E velocity.

A. Reference Sample.



B. Broad Sample.

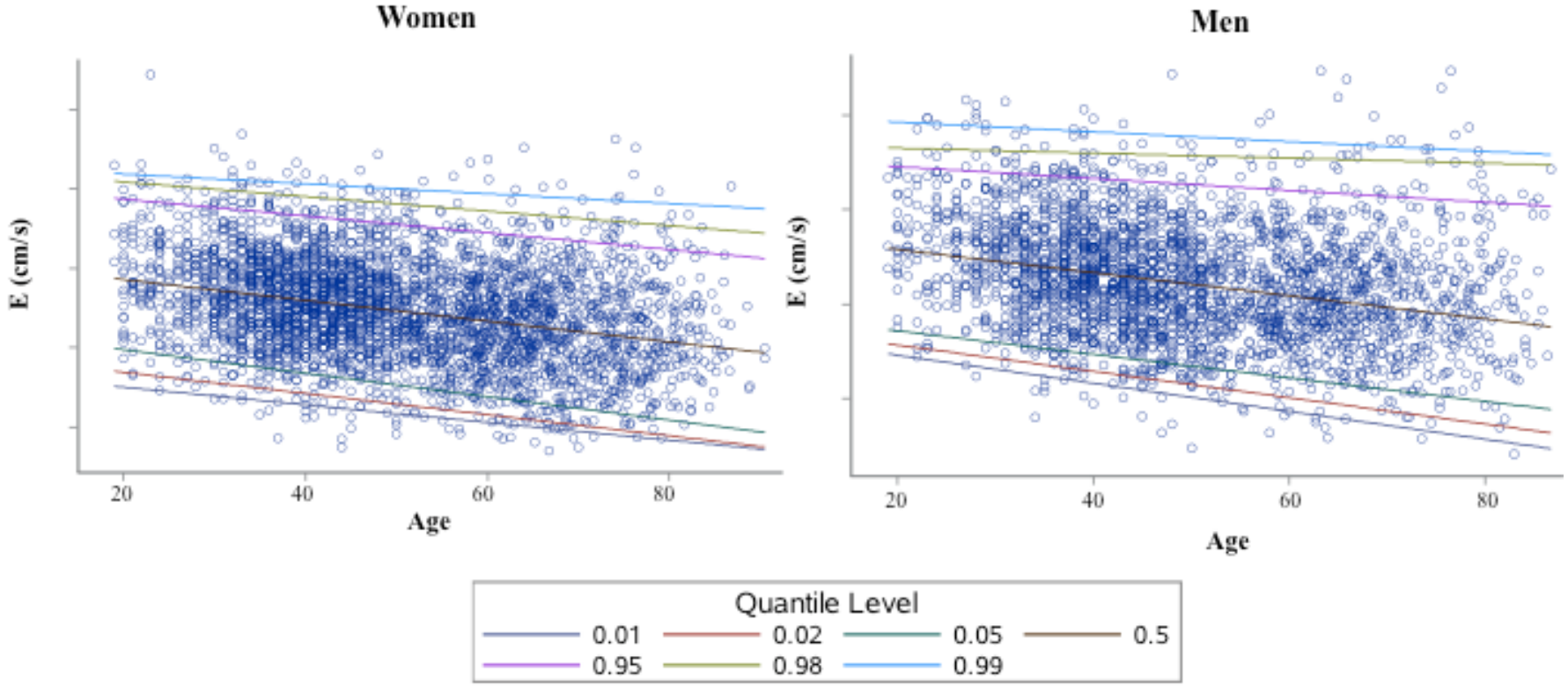
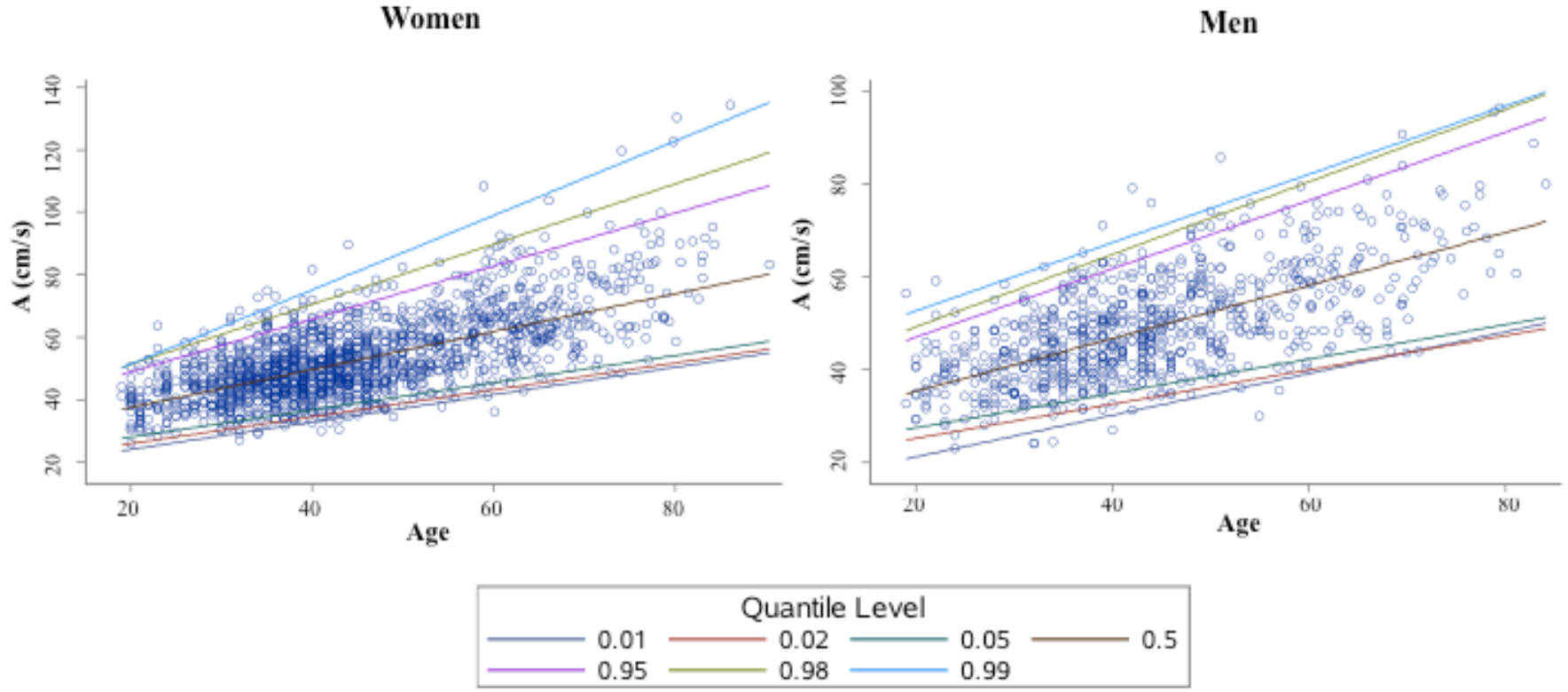


Figure S6. Quantile regression plots for A velocity.

A. Reference Sample.



B. Broad Sample.